

REMARKS

Amendment summary

Upon entry of this Amendment, Claims 1 and 6-17 will be pending.

Claim 1 is amended to include the transitional phrase “consisting essentially of.” Support for this amendment is found, e.g., in the Examples of the present specification.

Claims 18-27 are canceled.

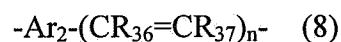
No new matter is added by this Amendment and Applicants respectfully submit that entry of this Amendment is proper.

Status of the claims

Claims 1 and 6-27 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Shi et al. (U.S. Patent No. 6,361,887) (hereinafter “Shi”). In addition, Claims 1 and 6-27 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Noguchi et al. (EP 1043382) (hereinafter “Noguchi”).

Response to rejection of Claims 1 and 6-27 under 35 U.S.C. § 103 based on Shi

The present claims relate to a polymeric fluorescent substance that exhibits fluorescence in the solid state. This polymeric substance consists essentially of repeating units of formula (1) and formula (8).

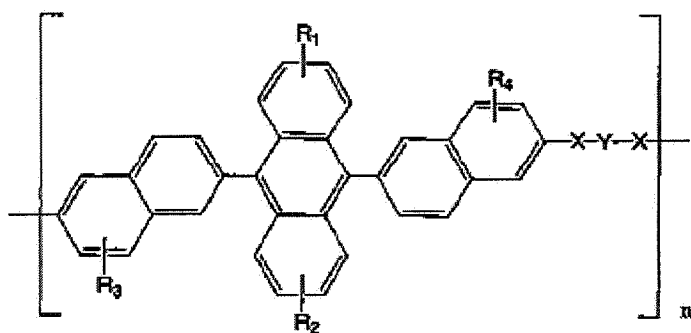


Ar₁ is a divalent group represented by formula (1'), which has at least one alkoxyphenyl substitution. See claim 1.

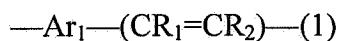
In addition, Ar₂ is further defined to represent a group represented by formula (2').

Applicants respectfully submit that Shi does not render obvious the presently claimed invention.

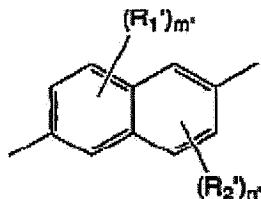
Shi discloses a polymeric luminescent materials comprising 9,10-di-(2-naphthyl)anthracene-based polymers of the below formula:



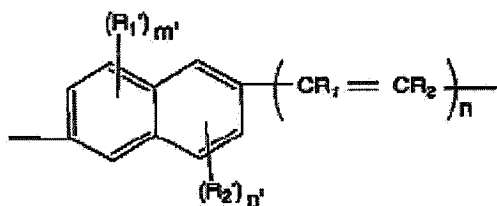
The present invention, on the other hand, comprises a naphthalene unit represented by formula (1) in claim 1:



wherein Ar₁ is a divalent group of formula (1'):



Accordingly, the monomer unit (1) of the present claims has the structure shown below:

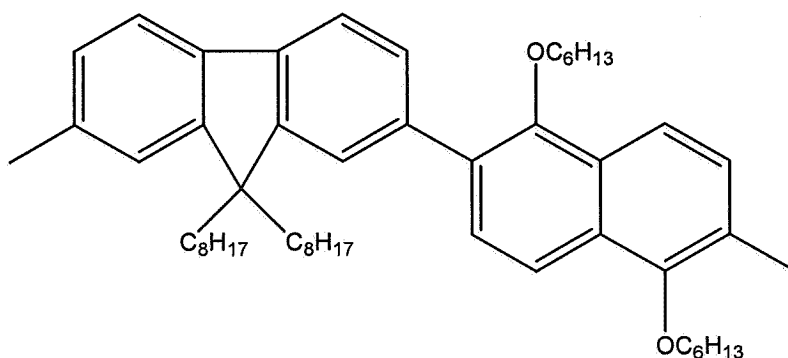


including at least one substituent of an alkoxyphenyl group as R_1' or R_2' on the naphthalene group.

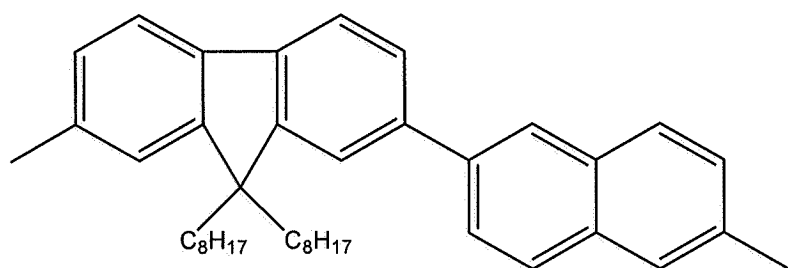
Applicants respectfully submit that the presently recited monomeric unit (1) is distinct from the 9,10-di-(2-naphthyl)anthracene of Shi. As shown in the chemical formulae above, the 9,10-di-(2-naphthyl)anthracene of Shi has a structure including three naphthalene units of (naphthalene-2,6-diyl)-(naphthalene-5,7-diyl)-(naphthalene-2,6-diyl), regularly arranged, in that order, which is distinct from the presently claimed invention. Therefore, Applicants respectfully submit that the 9,10-di-(2-naphthyl)anthracene of Shi does not render the present invention obvious.

Further, Applicants respectfully submit that the present claims have been amended to recite that the polymeric substance therein consists essentially of repeating units of formula (1) and formula (8). Applicants respectfully submit that this transitional phrase differentiates over the polymer within Shi, which contains anthracene-9,10-diyl.

Finally, Applicants respectfully submit that Example 1 and Comparative Example 1 of the present specification show the unexpectedly superior effects of the present invention, such as the relative value of the fluorescent strengths therein. Example 1 contains a repeating unit as follows:



Comparative Example 1 contains a repeating unit as follows:



Specifically, Example 1 shows that the relative value of the fluorescent strength thereof is 2.0, whereas in Comparative Example 1, the relative value of the fluorescent strength is 0.42. Accordingly, Applicants respectfully submit that the presently claimed invention is unexpectedly superior properties.

Accordingly, Applicants respectfully submit that Shi does not anticipate or render obvious the presently claimed invention. Applicants respectfully request the reconsideration and withdrawal of this rejection.

Response to rejection of Claims 1 and 6-27 under 35 U.S.C. § 103 based on Noguchi

Applicants respectfully submit that Noguchi does not render obvious the presently claimed invention.

Noguchi discloses arylene groups, some of which include naphthalene groups or fluorene groups. However, Noguchi does not disclose a copolymer comprising a naphthalene group and a fluorene group.

Therefore, Applicants respectfully submit that Noguchi does not render obvious the presently claimed invention. Applicants respectfully request the reconsideration and withdrawal of this rejection.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

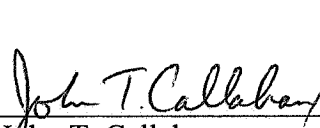
Respectfully submitted,

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